

**ARIZONA GAME AND FISH DEPARTMENT
HABITAT PARTNERSHIP PROGRAM
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL**

PROJECT INFORMATION

Project Title: Desert Bighorn Sheep Helicopter Survey- Game Management Unit 12BE (Paria Canyon-Vermilion Cliffs)

Project No. 07-221

Region/GMU: Region II/ GMU 12BE

HPC: Fredonia

Project Type: Desert Bighorn Sheep Survey

Project Description: It is recommended that a complete helicopter survey of all potential bighorn sheep habitat be conducted in Game Management Unit (GMU) 12BE. Information collected during surveys will enable the District Wildlife Manager to determine population estimates and trends as well as population composition and distribution. This information will establish baseline data and is fundamental for proper management of bighorn sheep in these units. Previous helicopter surveys were limited and only covered a small portion of bighorn sheep habitat in the Paria Canyon-Vermilion Cliffs area. The last helicopter survey was completed in 2005 and covered approximately 25% of potential bighorn habitat.

Wildlife Species to Benefit: Bighorn Sheep

Possible Funding Partners:

Implementation Schedule:

Beginning: September 2008

Completed: October 2008

NEPA Compliance: (if applicable)

Completed: Yes ____ No ____

Projected Completion Date:

PROJECT FUNDING

SBG Funds Requested: \$ 15,056.00

Cost Share Funds: \$ -----

Total Project Costs: \$ 15,056.00

PARTICIPANT INFORMATION

Applicant: Sophia L. Fong

Telephone: 928-645-6920

Address:

3500 S Lake Mary Road

Flagstaff, AZ 86001

AGFD Contact and Phone No.

(If applicant is not AGFD personnel)

Coordinated with: Brian Wakeling, Game Branch

Applicant's signature:

Date:

SEND COMPLETED APPLICATIONS TO:

Game Branch
2221 W. Greenway Rd.
Phoenix, AZ 85023
mdisney@azgfd.gov

(revised 6-05-2007)

WAS PROJECT PRESENTED TO THE LOCAL HPC? YES _____ NO X

HAS PROJECT BEEN SUBMITTED IN PREVIOUS YEARS? No IF SO WAS IT FUNDED?

NEED STATEMENT/PROBLEM ANALYSIS:

Annual surveys from 1994 to 2005 indicate the bighorn population in GMU 12BE has declined. In 1992, 112 bighorn sheep were classified in 3.7 survey hours and in 1994, 98 bighorn were observed in 5.1 hours of helicopter survey time. This number over the last decade has dramatically declined, with only a total of 46 bighorn sheep being classified in 4.8 survey hours in the last survey effort done in 2005.

By the early 1980's it was estimated that all desert bighorn sheep within Paria Canyon-Vermilion Cliffs area had been extirpated. In 1984 to 1985 a total of 52 desert bighorn sheep were transplanted into 12BE in an effort to reestablish a resident bighorn sheep population in the Paria Canyon-Vermilion Cliffs area. From 1985 to 1994 lamb production rates were at its highest in the newly reestablished unit with population estimates averaging over 150 animals. In 1991 the first hunt opened with 4 permits with an average harvested ram scoring in the mid-160s. Then in 1994 and 1995, several hunters observed a number of rams coughing or sneezing and another ram with one horn missing which may have indicated the presence of sinusitis within the population. Lamb production over the next couple of years were at its lowest, but then stabilized at moderate levels at 26 lambs:100 yews. Although lamb production has been fairly stable for the last 10 years, recent surveys indicate that the overall population has been steadily declining with current population estimates averaging around 90 animals. The number of are rams estimated at almost half of what it was in the mid 1990s. The average hunter harvested ram score in the last couple of years has declined to the low-150s. The cause for the population decline in the mid-90s is unknown, however observations indicate that disease could have been a significant factor. Predation, drought, utilization of other areas outside of the traditional survey areas or dispersal to Utah or the Grand Canyon National Park could also have played a role.

Bighorn habitat in unit 12BE appears to be in excellent condition. Recent rain and snowfall have helped to rejuvenate drought impacted plant communities in the Paria Canyon/ Vermilion Cliffs area. The more arid southwestern edges of the Vermilion Cliffs have received less precipitation, but still provide suitable habitat for bighorn populations. There is a good diversity of healthy shrubs (black brush, ephedra, buckwheat, saltbush, etc.) and grasses (Indian ricegrass, squirrel tail, etc.) available, as well as succulents (barrel cactus, agave, etc.) and forbs. Because the lack of perennial water is believed to be the primary limiting factor in the utilization of the entire suitable bighorn habitat, The Arizona Strip Desert Bighorn Sheep Management Plan outlines several strategies to improve bighorn sheep distribution, including improving and expanding water developments. With these habitat improvements, the Paria Canyon-Vermilion Cliffs has the potential to maintain a much larger population than it has in the past.

Although the last helicopter survey indicated a population around 90 animals, recent observations by local hunters and wildlife enthusiast as well as by condor biologists and wildlife manager, have suggested otherwise. Local hunters have stated that they have seen larger herds with more rams and lambs in the last couple of years than in the past and have voiced their concerns in the last public hunt recommendation meeting in Page, AZ in June 2008. Condor biologists, other AGFD employees as well as the wildlife manager for the unit have observed bighorn sheep, their tracks and droppings in areas that have never been surveyed in the past. On one occasion, a herd of 5 rams were observed approximately 1/2 mile inland from a wildlife catchment in the pinyon-juniper. Insufficient survey time may indicate a lower population estimate than the actual herd, which directly impacts hunt recommendations and management guidelines. Conducting a complete helicopter survey of all potential

bighorn sheep habitat could positively affect hunter opportunity, especially if additional populations of bighorn are found to be utilizing habitat outside of the traditional areas surveyed.

In order to more accurately manage this sheep population and to offer optimal permit levels consistent with management guidelines, it is important to collect accurate and current population data. Game Management Unit 12BE has not been surveyed for Bighorn Sheep on an annual basis since 2002. Currently 12BE, as well as other bighorn sheep units in the state, are scheduled to be surveyed on a three-year rotation. Even with a three year survey rotation schedule, funding for bighorn sheep surveys is often insufficient. Records indicate that a complete survey which covers all potential bighorn sheep habitat in 12BE has never been conducted. In 2005 approximately 25% of the habitat in the Paria Canyon-Vermilion Cliffs area was surveyed.

Bighorn sheep habitat in GMU 12BE is remote, complex and encompasses an extremely large area. Collecting through, accurate data is extremely important not only for hunt recommendations and management guidelines, but for establishing an accurate population characteristics baseline prior to future habitat improvement projects.

PROJECT OBJECTIVES:

1. Complete an aerial survey of all potential bighorn sheep habitat within 12BE (helicopter survey rate will be approximately 8 square miles per hour).
2. Determine complete, baseline population characteristics and population potential.
3. Determine current habitat utilization and areas that would benefit from habitat enhancement projects.

This project will increase area surveyed in the Paria Canyon-Vermilion Cliffs by over 300%.

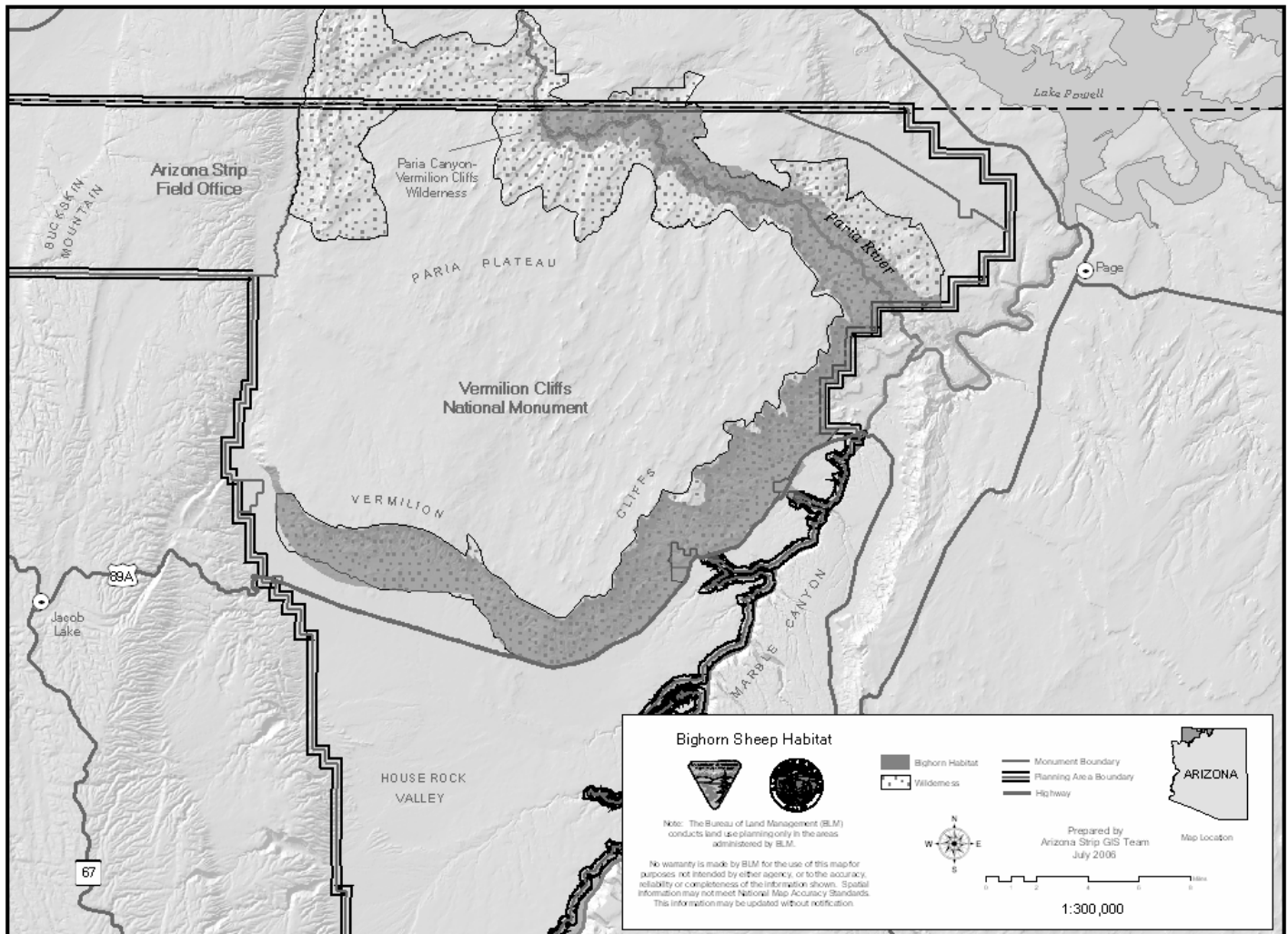
PROJECT STRATEGIES:

Complete a total of 16-18 hours of aerial helicopter survey in September and October of 2008 to determine population demographics and establish valuable baseline data for proper management of desert bighorn sheep in 12BE. Establishing complete baseline data for the bighorn sheep population in 12BE is fundamental for meeting management objectives and future projects. This information is vital to the hunt recommendation process, ultimately determining the number of permits allocated for this unit. Surveys will occur in all potential bighorn habitat (approximately 140 square miles) within the Paria Canyon-Vermilion Cliffs Wilderness Area and National Monument and the Glen Canyon National Recreation Area.

PROJECT LOCATION:

Survey Area: All known bighorn sheep habitat in 12BE, including the Vermilion Cliffs, Paria Canyon and portions of Marble Canyon within the Glen Canyon National Recreation Area.

Map 5. Paria Canyon - Vermilion Cliffs Desert Bighorn Sheep Habitat Area
Public Lands Administered by the Arizona Strip BLM





LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and provide landowner's name):

Land ownership within the survey area is primarily managed as congressionally designated wilderness or national monument by the BLM.

IF PRIVATE PROPERTY, IS THERE A STEWARDSHIP AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT? N/A

HABITAT DESCRIPTION:

Plant communities in the Paria Canyon-Vermilion Cliffs and Marble Canyon area ranges from intermittent perennial riparian habitat at the lowest elevations, blackbrush communities at the middle elevations, and open sagebrush, pinyon-juniper communities at the highest elevations. Associated species include Utah Juniper, Single Leaf Pinyon, big sagebrush, narrow leaf yucca, buckwheat and several grass and forb species. Additional associated species include black brush, mormon tea, various shrubs, many forb species, and several grass species in the transition zone on the cliff benches.

ITEMIZED USE OF FUNDS:

12BE Desert Bighorn Sheep Helicopter Survey-2008

Costs Category-Equipment, Labor, Administrative, Material	Grant Dollars Requested – Special Tag
18 hours** of Helicopter Survey time for 12BE @ \$697.00/hour	\$12,546.00
Helicopter Ferry and Fuel Truck Costs @ 20%/hour	\$2,510.00
Total Project Cost	\$15,056.00

**8 hours of helicopter survey time is recommended for the 2008 Wildlife Conservation Fund (WCF/W53) for 12BE, however funding has not been secured or allocated as of date.

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

Arizona Strip BLM- Land management agency coordination with AGFD to meet project objectives.

National Park Service- Land management agency coordination.

Arizona Strip Bighorn Sheep Core Team- Multi-agency team that focuses on Bighorn Sheep management objectives on the Arizona Strip.

Papillion- Contract Helicopter Services for surveys.

ADBSS- Funding Partner.

PROJECT MONITORING PLAN:

This project will be monitored by AGFD personnel, including individuals from Game Branch, regional staff, and the wildlife manager for 12B.

PROJECT MAINTENANCE: None

PROJECT COMPLETION REPORT TO BE FILED BY: Sophia Fong – Wildlife Manager GMU 12B

WATER DEVELOPMENT PROJECTS (see attached worksheet): N/A

TREE SHEARING (AGRA-AXE, PUSH) PROJECTS (see attached worksheet): N/A